

#### Group exercises #4

- 1) How many times is the following loop executed? Trace the execution of the code by writing the successive values of the variables number and done.

```
int number = 2;
boolean done = false;
while (!done) {
    number *= 2;
    done = (number > 64);
}
```

- 2) Write a method ,countChar, that takes a String and a char and that returns the number of times that character appears in the string. For instance, countChar("aa123abdae6", 'a') should return 4 since the character 'a' appears 4 times in the string. Use only the methods charAt and length from the String class.

- 3) If we list all the positive integers less than 10 that are multiples of 3 or 5, we get 3, 5, 6 and 9. The sum of these multiples is 23.

- a. Write a loop that finds the sum of all the positive integers less than 1000 that are multiples of 3 or 5.
- b. Run the code in Eclipse and give the answer that you find.

- 4) Write a nested loop code segment that produces this output

```
1
1 2
1 2 3
1 2 3 4
1 2 3
1 2
1
```

- 5) Write a method, keywordCount, that takes an ArrayList of Strings, listOfStrings, and a String, keyword, and that returns the number of times the String keyword appears in all of the Strings of listOfStrings.

For instance if listOfStrings contains

["The classification of cats", "staccato", "catamaran", "the caterpillar and the bobcat"]

and if keyword is "cat", then the call keywordCount(listOfStrings, keyword) would return 6 since the string "cat" appears 6 times in all of the strings listed in listOfStrings.

You may use any method from the `String` class in your solution (a good one for this problem is `indexOf`).